

First named inventor: Flotats
Serial no. 10/766,554
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Attorney docket no. 200206527-1

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In the claims

1. (currently amended) A media-positioning sensor assembly comprising:
a mechanism to move back and forth over media along a first axis, the media advancing past the mechanism along a second axis perpendicular to the first axis; and,
a media-positioning sensor situated on the mechanism to detect positioning of the media relative to the mechanism along at least one the first axis and the second axis, ~~including to detect relative movement of the media along at least one of the first axis and the second axis,~~
wherein one or more of the following is true:
first, the mechanism moves back and forth over the media along the first axis between a first end position and a second end position, the media-positioning sensor having a first sub-sensor remaining over the media when the mechanism is at the first end position and a second sub-sensor remaining over the media when the mechanism is at the second end position; and,
second, upon a beginning of the media passing under the mechanism relative to the second axis, the mechanism moves substantially to a center of the media with respect to the first axis, such that the media-positioning sensor is able to detect the beginning of the media relative to the second axis at the center of the media with respect to the first axis.
2. (original) The media-positioning sensor assembly of claim 1, further comprising a shaft on which the mechanism is slidably attached, such that the mechanism moves back and forth on the shaft and over the media along the first axis.
3. (original) The media-positioning sensor assembly of claim 1, wherein the mechanism comprises a fluid-ejection mechanism having situated thereon a plurality of fluid-ejection devices, such that the media-positioning sensor is situated on the mechanism relative to the plurality of fluid-ejection devices.

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4. (original) The media-positioning sensor assembly of claim 3, wherein the fluid-ejection mechanism is an inkjet-printing mechanism, and the plurality of fluid-ejection devices is a plurality of inkjet pens.
5. (original) The media-positioning sensor assembly of claim 1, wherein the mechanism moves back and forth over the media along the first axis between a first end position and a second end position, the media-positioning sensor remaining over the media when the mechanism is at the first end position and when the mechanism is at the second end position.
6. (cancelled)
7. (original) The media-positioning sensor assembly of claim 1, wherein the media-positioning sensor is an optical sensor.
8. (original) The media-positioning sensor assembly of claim 1, wherein the media-positioning sensor is to generate electrical signals at a resolution upon detecting motion of the media relative to the mechanism along at least one of the first axis and the second axis.
9. (original) The media-positioning sensor assembly of claim 1, wherein the media-positioning sensor is to generate firing signals at a resolution upon detecting motion of the media relative to the mechanism along at least one of the first axis and the second axis.
10. (original) The media-positioning sensor assembly of claim 1, wherein the media-positioning sensor comprises:
an optical sensing mechanism to capture images of the media;

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an illumination mechanism to illuminate the media as the at least one optical sensing mechanism captures images of the media; and,

a controlling mechanism to control the at least one optical sensing mechanism and the illumination mechanism.

11. (original) The media-positioning sensor assembly of claim 1, wherein the media-positioning sensor captures images of inherent physical aspects of the media, the images utilized to determine positioning of the media relative to the mechanism.

12. (cancelled)

13. (original) The media-positioning sensor assembly of claim 1, wherein upon a beginning of the media passing under the mechanism relative to the second axis, the mechanism moves back and forth over the media along the first axis, such that the media-positioning sensor is able to detect margins of the media with respect to the first axis.

14. (original) The media-positioning sensor assembly of claim 1, wherein upon a beginning of the media passing under the mechanism relative to the second axis, the mechanism moves to a predetermined location over the media along the first axis for the media-positioning sensor to detect a pattern imprinted on the media at the predetermined location.

15. (original) The media-positioning sensor assembly of claim 1, wherein upon a beginning of the media passing under the mechanism relative to the second axis, the mechanism moves back and forth over the media along the first axis for the media-positioning sensor to detect a pattern imprinted on the media.

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16. (currently amended) An image-forming device comprising:
- a fluid-ejection mechanism to move back and forth over media along a first axis and eject fluid on the media;
 - a media-advance mechanism to advance the media along a second axis perpendicular to the first axis; and,
 - a media-positioning sensor moving in concert with the fluid-ejection mechanism to detect positioning of the media relative to the fluid-ejection mechanism along at least one of the first axis and the second axis, ~~including to detect relative movement of the media along at least one of the first axis and the second axis,~~
- wherein one or more of the following is true:
- first, upon a beginning of the media passing under the media-advance mechanism relative to the second axis, the media-advance mechanism moves substantially to a center of the media with respect to the first axis, such that the media-positioning sensor is able to detect the beginning of the media relative to the second axis at the center of the media with respect to the first axis; and,
 - second, the media-positioning sensor is situated on the fluid-ejection mechanism, and the fluid-ejection mechanism comprises a plurality of fluid-ejection devices including a first fluid-ejection device and a last fluid-ejection device, the media-positioning sensor comprises a first sub-sensor and a second sub-sensor, the first sub-sensor positioned between the first fluid-ejection device and a first end of the fluid-ejection mechanism, and the second sub-sensor positioned between the last fluid-ejection device and a second end of the fluid-ejection mechanism.
17. (original) The image-forming device of claim 16, further comprising a controller to control advancement of the media by the media-advance mechanism and movement over the media by the fluid-ejection mechanism based on positioning of the media relative to the fluid-ejection mechanism as detected by the media-positioning sensor.

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18. (original) The image-forming device of claim 17, wherein the media-positioning sensor is to transmit signals to the controller at a resolution upon detecting motion of the media relative to the media-advance mechanism along at least one of the first axis and the second axis.
19. (cancelled)
20. (original) The image-forming device of claim 16, wherein upon a beginning of the media passing under the media-advance mechanism relative to the second axis, the media-advance mechanism moves back and forth over the media along the first axis, such that the media-positioning sensor is able to detect margins of the media with respect to the first axis.
21. (original) The image-forming device of claim 16, wherein upon a beginning of the media passing under the media-advance mechanism relative to the second axis, the media-advance mechanism moves along the first axis for the media-positioning sensor to detect a pattern imprinted on the media.
22. (original) The image-forming device of claim 16, wherein the media-positioning sensor is an optical sensor.
23. (original) The image-forming device of claim 16, wherein the media-positioning sensor is situated on the fluid-ejection mechanism.
24. (original) The image-forming device of claim 23, wherein the fluid-ejection mechanism comprises a plurality of fluid-ejection devices including a first fluid-ejection device and a last fluid-

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ejection device, the media-positioning sensor situated between the first and the last fluid-ejection devices.

25. (cancelled)

26. (original) The image-forming device of claim 16, wherein the fluid-ejection mechanism is an inkjet-printing mechanism, such that the image-forming device is an inkjet printer.

27.-28. (cancelled)

29. (currently amended) A method comprising:

moving a mechanism over media in a first direction;

sensing positioning of the media relative to the mechanism in the first direction using a media-positioning sensor situated on the mechanism as the mechanism moves over the media in the first direction, ~~including sensing relative movement of the media in the first direction;~~

advancing the media in a second direction perpendicular to the first direction; and,

sensing positioning of the media relative to the mechanism in the second direction using the media-positioning sensor situated on the mechanism, ~~including sensing relative movement of the media in the second direction.~~

wherein one or more of the following is true:

first, the method further comprises, upon the media being advanced in the second direction such that a beginning of the media passes under the mechanism:

moving the mechanism substantially to a center of the media along the first direction; and,

detecting the beginning of the media using the media-positioning sensor;

second, sensing positioning of the media relative to the mechanism in the first

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direction comprises:

capturing a plurality of images of the media with the media-positioning sensor as the mechanism moves over the media in the first direction; and,

comparing at least two of the plurality of images captured to determine positioning of the media relative to the mechanism in the first direction; and,

third, sensing positioning of the media relative to the mechanism in the second direction comprises:

capturing a first image of the media with the media-positioning sensor before the media is advanced in the second direction;

capturing a second image of the media with the media-positioning sensor after the media is advanced in the second direction; and,

comparing the second image with the first image to determine positioning of the media relative to the mechanism in the second direction.

30. (cancelled)

31. (original) The method of claim 29, further comprising detecting a pattern imprinted on the media using the media-positioning sensor.

32. (original) The method of claim 29, further comprising:

moving the mechanism over the media in a third direction opposite to the first direction;

and,

sensing positioning of the media relative to the mechanism in the third direction using the media-positioning sensor situated on the mechanism as the mechanism moves over the media in the first direction.

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33. (original) The method of claim 32, further comprising detecting margins of the media along at least one of the first direction and the third direction using the media-positioning sensor.
34. (original) The method of claim 29, further comprising ejecting fluid onto the media by a fluid-ejection mechanism situated on the mechanism as the mechanism moves over the media in the first direction.
35. (original) The method of claim 29, wherein sensing positioning of the media comprises transmitting signals at a resolution upon detecting motion of the media relative to the mechanism.
- 36.-37. (cancelled)